Claims

1. An apparatus for facilitating communications between a processor at a legacy control station and a legacy remote device over a communication network, comprising:

a) a set of instructions executable by the processor, comprising:

i) instructions for communicating data from the control station to the remote device, comprising:

1) a first transmission portion adapted to accept signals from a preexisting host application computer program in a predetermined format,

2) a second transmission portion adapted to convert the formatted host application computer program signals into a packet-switched format for transmission to the remote device by means of a network, and

3) a third transmission portion adapted to generate commands to satisfy at least one host application computer program handshaking protocol; and

ii) instructions for receiving data from the remote device, comprising:

1) a first receiving portion adapted to accept packet-switched data from the network,

2) a second receiving portion adapted to convert the packet-switched data into a predetermined format corresponding to the pre-existing communication protocol of the control station host application computer program, and

3) a third receiving portion adapted to generate commands to satisfy at least one host application computer program handshaking protocol; and

b) a hardware interface component located in proximity to the remote device, comprising:

i) a transceiver portion electrically coupled to the network and adapted to:

1) accept packet-switched signals from the network, and

2) send packet-switched signals to the network;

ii) a remote processor electrically coupled intermediate to the transceiver portion and the remote device, the remote processor being adapted to:

1) convert packet-switched signals received from the transceiver to a predetermined format corresponding to the communication protocol of the remote device, and

2) convert formatted signals corresponding to the communication protocol of the data received from the remote device to packet-switched data; and

iii) a bidirectional data interface electrically coupled to the remote device and the remote processor to communicate signals from the remote device to the remote processor and to communicate signals from the remote processor to the remote device,

wherein the set of instructions and hardware interface component cooperate to facilitate communication between a legacy remote device and a corresponding legacy host application computer program by means of the communication network.

2. The apparatus according to claim 1 wherein the commands to satisfy at least one computer program handshaking protocol comprise programmable connection tuning commands comprising at least one of fast loop-back commands, tickle hold-off commands, block transmit commands, and dynamic packet sizing commands.

3. The apparatus according to claim 1, further comprising a graphical user interface for configuring the commands to satisfy at least one computer program handshaking protocol.

4. The apparatus according to claim 1, further comprising a client computer program for initiating communications between the control station and the remote device.

5. The apparatus according to claim 4 wherein the client computer program comprises at least one of an e-mail program and a paging program.

6. The apparatus according to claim 1 wherein the remote processor further comprises embedded instructions that are executable by the remote processor.

7. The apparatus according to claim 1 wherein communications between the control station and the remote device are accomplished by means of a secure communications path.

8. The apparatus according to claim 1 wherein at least one of the control station signals and remote device signals are encrypted prior to transmission and then decrypted after reception.

9. The apparatus according to claim 1 wherein the control station and remote device comprise a SCADA system.

10. The apparatus according to claim 1 wherein the processor is a computer.

11. The apparatus according to claim 1 wherein only the hardware interface initiates communication between the remote device and the control station.

12. The apparatus according to claim 11 wherein the hardware interface is adapted to initiate communication with the control station in accordance with at least one of an interval schedule, dialing commands and a triggering event.

13. The apparatus according to claim 1 wherein the remote processor comprises a microprocessor.

14. The apparatus according to claim 1, wherein the first transmission portion accepts control and data signals from a preexisting host application computer program in a predetermined format.

15. A method for facilitating communications between a legacy control station and a legacy remote device over a communication network, comprising the steps of:

a) providing instructions executable by a processor at the control station;

b) providing a hardware interface component in proximity to and in electrical communication with the remote device;

c) facilitating, within the control station, communications from the control station to the remote device by:

i) accepting signals from a preexisting host application computer program,

ii) converting the host application computer program signals from a predetermined format into a packet-switched format for transmission to the remote device by means of the communication network,

iii) generating handshaking commands to satisfy at least one host application computer program handshaking protocol, and

iv) communicating the handshaking commands to the host application computer program;

d) facilitating, within the control station, communications from the remote device to the control station by:

i) accepting packet-switched data from the network,

ii) converting the packet-switched data to a predetermined format corresponding to the communication protocol of the host application computer program, and

iii) generating handshaking commands to satisfy at least one host application computer program handshaking protocol; and

iv) communicating the handshaking commands to the host application computer program;

e) facilitating communications from the control station to the remote device within the hardware interface component by:

i) accepting packet-switched signals from the network, and

ii) converting the packet-switched data to a predetermined format corresponding to the communication protocol of the remote device, and

iii) communicating the converted data to the remote device;

f) facilitating communications from the remote device to the control station within the hardware interface component by:

i) accepting signals from the remote device, the signals having a predetermined format corresponding to the communication protocol of the remote device;

ii) converting the signals to packet-switched data; and

iii) communicating the packet-switched data to the control station by means of the communication network,

wherein the legacy control station and the legacy remote device communicate via the communication network.

16. The method according to claim 15 wherein the commands to satisfy at least one computer program handshaking protocol comprise programmable connection tuning commands comprising at least one of fast loop-back commands, tickle hold-off commands, block transmit commands, and dynamic packet sizing commands.

17. The method according to claim 15, further comprising the step of using a graphical user interface to configure the commands to satisfy at least one computer program handshaking protocol.

18. The method according to claim 15, further comprising the step of using a client computer program to initiate communications between the control station and the remote device.

19. The method according to claim 18 wherein the client computer program comprises at least one of an e-mail program and a paging program.

20. The method according to claim 15 wherein the steps of converting packet-switched data to a predetermined format and converting the signals to packet switched data within the hardware interface component are accomplished using embedded instructions.

21. The method according to claim 15 wherein communications between the control station and the remote device are accomplished by means of a secure communications path.

22. The method according to claim 15, further comprising the steps of encrypting at least one of the control station signals and remote device signals prior to transmission, and then decrypting at least one of the control station signals and remote device signals after reception.

23. The method according to claim 15 wherein the control station and remote device comprise a SCADA system.

24. The method according to claim 15 wherein the steps of facilitating, within the control station, communications from the control station to the remote device and the steps of facilitating, within the control station, communications from the remote device to the control station, are performed by a computer.

25. The method according to claim 15 wherein only the remote device initiates communication between the remote device and the control station.

26. The method according to claim 25 wherein the remote device initiates communication with the control station in accordance with at least one of an interval schedule, dialing commands and a triggering event.

27. The method according to claim 15 wherein the steps of facilitating communications from the control station to the remote device within the hardware interface, and the steps of facilitating communications from the remote device to the control station within the hardware interface, are performed by a microprocessor.

28. The method according to claim 15 wherein the signals accepted from the preexisting host application computer program are control and data signals.